the most of the arguments are well worthy of perusal. We can only refer the reader for these to the volume itself, which should be in the library of every neurologist. The subject is one that has up to this time been too sadly neglected.

III.—TEXT BOOKS OF PHYSIOLOGY.

I. A TEXT BOOK OF PHYSIOLOGY. By M. Foster. London: MacMillan & Co. 1879. Pp. 720.

II. HANDBUCH DER PHYSIOLOGIE. Herausgegeben von Dr. L. Hermann. Leipzig: F. C. W. Vogel. 1879.

I. A test, not altogether unreliable, of the merits of a book, is its sale. On this score Mr. Foster cannot complain, since his Physiology has passed through three editions within the three years of its existence, and a fourth cheaper students' edition is promised by the publishers. Since the first edition the work has been slightly enlarged, and numerous cuts of instruments have been added, not merely ornamental but decidedly instructive. On the whole, the book can be called the standard work in the English language, while it has none superior in any other tongue. It is, perhaps, the only work in our language which represents physiology fully as an experimental science. Its completeness is admirable. The anxious student can find not only the actual facts of the science, but also the mode in which they were obtained. Modern bibliographical references are given very fully, while the sources of older quotations are sufficiently indicated. The author proves to the student not only a compiler, but also a judicious critic. Where conflicting results are given, both sides receive an impartial representation, while any differences in the experimental conditions are fully alluded to. Older or unreliable statements are not ignored, but allowed the space which they deserve. A commendable feature of the book is also the arrangement of topics. By introducing a thorough description of the general mechanism of the nervous system in the first part of the book, the author is enabled to complete each chapter with the full details of the nervous connections of the organs considered.

Foster's Physiology is one of those books which can bear to have their faults pointed out fully. Of actual errors we have met with but one—the statement (p. 68) that the negative variation of the nerve-current can cause secondary (induced) contractions. This, though an error, is not a very serious one. As regards any omissions, but very few authors of any importance are not mentioned in connection with the topic which they have investigated. Perhaps the most flagrant instance is the omission of the researches of Francois-Franck and Pitres, on the excitability of the cerebral cortex. These researches have certainly less apparent in the chapters written by Hermann than in the rest, as far as it has come to hand.

The part written by O. Nasse, the chemistry and tissue-change of muscles, can truly be called a model. Like the chapters written by Hermann, it is not open to any reproach of verbosity, a fault not easily avoided in such a work.

The last chapter in Part I., Vol. I., comprises protoplasmic and ciliary motion, by Engelmann. As far it goes, it can be fairly compared with the preceding parts; but the absence of suggestiveness is even here more painfully noticeable, on account of the nature of the subject.

In the first half of the second volume we find the special physiology of the spinal, cranial and sympathetic nerves, by Sigmund Meyer. This part is certainly less satisfactory; it is a mere compilation, although very complete as such. The methods of research are not described; hence, where conflicting statements are mentioned, the reader has no clue by which to test their separate validity. The writer's judgment, in such instances, it would not always be safe to accept implicitly. It certainly seems to us that the eminent labors of Cl. Bernard, on some of the cranial nerves, do not receive the credit which they deserve.

The second part of Vol. II. contains the central nervous system (excluding the cortex) by Eckhard, and the cerebral cortex by Exner.

The first of these writers abounds in refreshing scepticism; but this is frequently carried to such an extreme, that the reader sees rather the negative than the positive side of our knowledge. Again, we find but an imperfect account of methods and experiments, so that the reader's own judgment cannot come into play. The author shows an admirably thorough knowledge of the literature; he is, besides, competent to speak authoritatively on the basis of his own large experience. Nevertheless, the reader of the treatise cannot avoid referring to the original memoirs quoted for satisfactory information. Pathological observations are neglected, perhaps, unjustly; thus the division of the spinal cord into strands, which can only be recognized when degenerated or while still undeveloped (Flechsig), is dismissed in too few words. The systematic arrangement, however, is very satisfactory. But decided criticism can be applied to the language. It is clear, it is true, but by no means agreeable: the sentences are often unnecessarily long and complicated; the paragraphs are of such a length as to become wearisome.

Exner's consideration of cerebral physiology is both exhaustive and impartial. The cortical centres of animals receive an excellent description. The corresponding parts of man are necessarily dismissed with a briefer description, but this is the fault of the subject. Perhaps, most exception can be taken to the unnecessary amount of space devoted to a rather sterile discussion of Fechner's psycho-physical law. H. G.